

NOTES

WE regret to learn of the death, at the age of eighty years, of the eminent physiologist, Prof. Karl von Siebold, of Munich.

WE have also to announce the death of Mr. Frederick Field, F.R.S. Mr. Field was one of the original members of the Chemical Society. He held for some time the post of Vice-Consul in Caldera, Chili, and was successively Professor of Chemistry at St. Mary's Hospital and the London Institution. He was senior partner of the firm of J. C. and J. Field at the time of his death. Mr. Field contributed numerous papers to various branches of chemistry, especially that relating to the mineralogy and metallurgy of South America.

A COMMUNICATION dated March 7 has been received from Mr. Thorlacius, observer for the Scottish Meteorological Society at Stykkisholm, in which he states that till February the winter in Iceland was not a severe one. In that month, however, the weather was very cold, and ice between six and seven feet thick formed in the harbour, during which of course no temperature observations of the sea could be taken. On March 4 and 5 the ice broke up, and in the open space between the floating ice-blocks the temperature of the sea was found to be 29°O . Of the Spitzbergen ice it is remarked that nothing had yet been heard of it, but that it could not be far off, as north-easterly winds had been blowing all February. Mr. Thorlacius observed an aurora on January 24, with a triple arch and faint traces of a fourth bow within the other three arches close down on the horizon, being the first time an aurora of this description has been seen by him since he began his regular meteorological observations in 1845.

THE *Monthly Weather Review* of the Dominion of Canada for February, 1885, presents some points of interest. At Victoria, British Columbia, the mean temperature was 9°O higher than the average, and $13^{\circ}\cdot8$ higher than February last year; but, on the other hand, to the east of the Rockies, temperature was under the average, the greatest defect from the average, $13^{\circ}\cdot3$, occurring at Port Stanley. At Toronto the mean temperature was only $11^{\circ}\cdot1$, being $11^{\circ}\cdot1$ lower than the average of forty-five years, and with the single exception of February, 1875, when the mean fell to $10^{\circ}\cdot2$, was the coldest month recorded at the observatory during the past forty-five years. Generally the month was remarkable for the cold which prevailed nearly everywhere, and also for the very stormy weather which was experienced over the Lake Region, and in Eastern Canada, between the 8th and 11th. On the 9th temperature fell in Manitoba to $-48^{\circ}\cdot3$ at St. Andrew's, and -46°O at Stony Mountain; and in Asiniboia to -47°O at Pheasant Forks. The proportion of sunshine recorded in each hour of the day during which the sun was above the horizon is given for twelve stations, giving a mean result of 39 per cent. of actual as compared with possible hours of sunshine. It is remarkable that only at one of the twelve stations, viz. Cornwall, was 100 per cent. recorded during any day of the month. The number of predictions or forecasts of weather issued during the month was 523, of which 80 per cent. were fully, and 92 per cent. either fully or partially, verified. As regards the three storms which occurred, thirty-nine warnings were issued and cautionary signals at the various signal stations, each of which was verified in every particular as to the force of the wind; and with respect to the predictions as to the probable changes in the direction of the wind, 90 per cent. were fully and 100 per cent. were either fully or partially verified.

MR. CUTHBERT E. PEEK sends us his First Report of a meteorological observatory established at Rousdon, Devon, in September, 1883. The Report presents some of the features of the meteorology of Rousdon during 1884. Fully half a quarto

page is given to a somewhat popular account of the weather of each month. A few illustrations are given, of which the first shows by curves the mean monthly temperature of Greenwich for the forty years ending 1873, and the mean at Rousdon for the months of 1884. Nowhere, however, is there printed in figures a monthly mean either of the pressure or the temperature of the air, the author contenting himself only with the extreme pressures and temperatures of the months. Subsequent reports will, no doubt, make good these omissions, and will continue, it is hoped, the comparison of the weather forecasts of the Meteorological Office, with the weather actually experienced in this district of Eastern Devon.

THE veteran zoologists of Cuba, *Science* states—Prof. Felipe Poey, who is now nearly eighty-six years old, and Dr. Juan Gundlach, who has completed his seventy-fourth year—are still engaged industriously in studying the fauna of that tropical island. Dr. Gundlach has been publishing his contributions to the fauna of Porto Rico in the *Annals* of the Spanish Society of Natural History. The vertebrates (including fishes by Poey) have all appeared, and recently the freshwater marine mollusca have been issued. Gundlach has been publishing every month eight octavo pages in the *Annals* of the Havana Academy of Sciences—a contribution to the mammals, birds, and reptiles of Cuba—and is now at work upon the insects, of which the Lepidoptera are already nearly completed, and occupy already nearly 400 pages. Poey has published the fishes of the island in the *Annals* of the Spanish Society of Natural History, and Arango has discussed the mollusks. It is to be hoped that these still vigorous naturalists will live to see the completion of the work they have undertaken with so much zeal.

THE French Academy of Sciences has appointed a new commission on aërostats consisting of MM. Faye, Freymy, Jamin, Tresca, Cornu, and Perier.

THE French Society of Physics will meet as usual to-day, in the rooms of the Société d'Encouragement, to exhibit all the new apparatus invented during the year.

PROF. TYNDALL will begin a course of five lectures at the Royal Institution on Tuesday next (April 16) on "Natural Forces and Energies."

THE arrangements for the remaining April Popular Science Lectures at the Royal Victoria Hall, Waterloo Road, are as follow:—April 21, P. H. Carpenter, D.Sc., on Greenland. April 28, Dr. J. A. Fleming, "Our Nimble Servant, Electricity, and what we can make it do."

EXHIBITS in the Fish Culture Department of the forthcoming Inventions Exhibition are already being placed in the several spaces allotted to them. They include hatching-boxes showing the manner in which fish eggs are incubated; feeding-boxes in which the fry are inserted after losing their *umbilical sac*, and numerous appliances and apparatus necessary to carrying on the work of fish-culture successfully. There will also be shown various species of fish in different stages of development reared artificially, together with models of fish-farms, oyster-culture establishments, and a number of other exhibits of an interesting nature.

A COMMISSION appointed by the French Government to inspect the forests of Tunis, and to make proposals with regard to afforestation, has recently presented its report. In the districts south of the Medjerda valley the so-called forests are mere brushwood, composed of the callistus, juniper, Aleppo pines, and small oaks. The land is cleared for pasturage and cultivation, and only here and there are seen groups of larger trees, such as Alpine firs and olives. Nothing is therefore to be gained by preserving here, and the cost would be very great;

but it is nevertheless recommended that some steps be taken to protect trees and shrubs which exercise a beneficial influence on the *régime des eaux*. The Kroumis mountains to the north are of a totally different character. Magnificent forests of old trees exist in them, which attain as great dimensions as those in the best French forests. They contain magnificent cork trees and white oaks (*Q. Mirbeckii*), with trunks three or four metres in circumference and ten to fifteen metres in height to the first branches. One forest covers 100,000 hectares, and contains also the alder, willow, wild cherry, beech, poplar, holly, bay, and the tamarisk. This and some neighbouring ones should, the report advises, be strictly preserved. The bark and wood of the oak and cork would repay the expense.

WE have received Mr. Morris's Annual Report on the Public Gardens and Plantations of Jamaica, which, as usual, contains various matters of much general and local interest. We have already referred, in noticing a similar report from Queensland, to the immense economical importance of such institutions as this, and we are glad to perceive that such competent authorities as the late Royal Commissioners in the West Indies and Sir Joseph Hooker have publicly recognised the value of Mr. Morris's labours. The former suggest that in all the lesser islands "plant committees" of the residents should at once be formed to correspond with the establishment in Jamaica, while Sir Joseph Hooker, in commenting on this recommendation in his letter to the Colonial Office, stated that there can be no doubt that the future prosperity of the West Indies will be largely affected by the extension to other islands unprovided with any kind of botanical establishment of the kind of the operations so successfully carried out by Mr. Morris in Jamaica. But he thinks that mere committees will not be enough: botanical stations on a cheap basis are an essential condition for doing anything in an effective way. The money value of rain in Jamaica is well shown in a paragraph in the report quoted from Mr. Maxwell Hall's estimate. A comparison has been made between so many inches of rain per annum and so many casks of sugar per acre. Thus there were 1559 casks per acre for 79 inches rainfall and 1441 casks with 56 inches, so that the difference due to a larger or smaller island rainfall is on an average nearly one-tenth of the export sugar crop. This one-tenth export crop, for sugar and rum, represents in value nearly 100,000*l*. But if other produce, which is likewise affected by a greater or less rainfall, such as coffee and pimento, the difference would amount to a very considerable sum. During the year considerable attention was devoted in the herbarium to the medicinal plants of the island, and to forming not only a collection of botanical specimens, but also of the barks, roots, and the portions used for medicine. The value of this herbarium to the commercial interests of the West Indies was shown while working up the botanical classification of the indigenous plants capable of yielding fibre. It was found that the common native *Agave* (aloe) of Jamaica was not, as had been represented in books on Jamaica plants, the *Agave americana*, but an entirely different species, the *Agave keratlo* of Salmdyck. The application of this difference, which appears to him only one of botanical nomenclature, to the industrial arts is that, under the belief that this plant was *Agave americana*, and therefore capable of yielding valuable fibre, large sums of money were spent and lost in getting out machinery to clean fibre which was of inferior quality.

AT the end of the report on the Jamaica public gardens above referred to, Mr. Morris mentions some curious instances of superstitions among the negroes with regard to plants. The plantation labourers believe that if they take up the horse-plaintain suckers (*i.e.* those with long fingers), and then take up one of the maiden plaintains (with the short fingers) while the gum or juice is still

fresh upon their cutlasses, and they use the same cutlass, the maiden plaintains will produce horse-plaintains, and this was said by them to be a matter of common experience. It is believed also to be unlucky to point the finger when speaking of any growing plant in a provision ground, or even to name a plant which has recently been planted. It is stated even by intelligent Europeans that if the seed of the shaddock (*Citrus decumana*) is planted, there is but one in a whole shaddock that will produce good and pleasant fruit, and also that there are fifty-two seeds in a shaddock, only two of which produce the real shaddock, while the others produce a variety of fruits such as the sweet lime, forbidden fruit, grape fruit, chester fruit, and orange!

ACCORDING to an article in the last number of the *Oesterreichische Monatsschrift für den Orient*, by Herr Friedrich Müller of Vienna, on the palæogeography of the Philippine Islands, the inhabitants of the archipelago of Malay descent possess a writing which is going more and more out of use and is being supplanted by the Latin writing introduced with Christianity by the Spanish missionaries. The original writing, which is on the whole in the same form among the various tribes, such as the Tagals, Ilocos, Visayas, Pampangas, is connected first with the writings of the people of the Celebes (Bugis, Macassars), and of Sumatra (Battak, Redschang, Lampong), and the forms point to India as the common origin of all. But whether the writing of the Malay peoples came direct from India, or through the intermediary of another writing; from which Indian alphabet it came, *i.e.* from which province; and at what time,—are questions which various competent scholars have answered in various ways, and which may therefore be regarded as still open. To those who desire to pursue the subject two interesting recent studies may be recommended. One, by Prof. Kern, of Leyden, appears in the well-known Dutch magazine, *Bijdragen tot de Taal-, Land- en Volkenkunde van Nederlandsch-Indië*, vol. iv. No. 10 (1885), which is a critical examination of the whole question; the other, in Spanish, by Señor Pardo de Tavera, is published as a pamphlet, and is entitled "A Contribution to the Study of the Ancient Alphabets of the Philippines." The special value of the latter is that it investigates the subject more thoroughly than any of its predecessors with special relation to the Philippines, and illustrates it by much that is original from the old literature of the archipelago. It is accompanied by plates, containing copies of no less than twelve Philippine alphabets. Nos. 11 and 12, however, appear to be identical, with the exception of being produced with different instruments. No. 11 is probably written with a pen on paper, while No. 12 was probably cut by a knife into wood. Even with this deduction there are still eleven distinct alphabets in this archipelago alone.

THE stone implements, shell heaps, and other prehistoric remains of Japan have already received some attention at the hands of Profs. Milne and Morse, and of Herr von Siebold, an Austrian *savant* in the diplomatic service in Tokio. Until quite recently, although the Japanese prized stone implements and the like, they appear to have done so on account of their peculiar shapes and as curiosities rather than because of their scientific importance. A Japanese gentleman filling a high official position has, however, just published a volume entitled, "Notes on the Ancient Stone Implements of Japan," for a description of the contents of which we are indebted to the *Japan Mail*. Mr. Kanda enjoys high reputation as an antiquarian. His book contains twenty-four plates, to each of which are appended accurate descriptions of the objects delineated, with their names and other details. The plates are not tinted, so they convey no idea of the colours of the originals, many of which are of black serpentine, jade, jasper, amethyst, agate, calcedony, &c. They give the exact shapes and dimensions of all the objects. Mr. Kanda's object is not to ventilate his own opinions, but to furnish

antiquarians abroad with data for comparing the stone implements of Japan with those found elsewhere. In a short treatise of eight pages he describes the beliefs universally current in Japan on the subject of these remains. Dividing stone implements into "chipped" and "polished," he mentions four varieties of the former, which, translating the original Japanese names, he calls arrow-heads, spear-heads, rice-spoons of the mountain gnomes, and pound-stones—the last being really hoe-heads. The three first are known all over Japan, but become more and more numerous as one approaches the north. They are supposed to have been used by the Ainos. Of the "polished" stone implements there are six principal varieties, vulgarly known as thunder-bolts, thunder-clubs, stone daggers, and dagger-heads, *magatama* and *kudatama*, or curve and tube-shaped jewels. The thunder-bolts, so called, are evidently axe-heads; they are found everywhere, but chiefly in the north. The "thunder-clubs" are beautifully ornamented, while their shape and size—occasionally they are found as much as five feet long and five inches in diameter—suggest the idea that they served as insignia of authority rather than as weapons of war. The prehistoric pottery, is Kamloka pottery, from the name of the locality in Northern Japan where it was first discovered. Like the stone implements, it occurs with greater frequency the farther north we go. The general conclusion is thus suggested that the aborigines of Japan were gradually pushed northward by invaders from the south, but where the distinction is to be drawn between the races known as Tsuchigamo, Yezzo, and Aino is a question for future determination. No metal implements have ever been found with this pottery, whereas it is constantly associated with all the stone implements enumerated above. In the ancient tombs, which exist everywhere throughout Japan except in Yezzo, there are unearthed several varieties of stone implements, and with them occur metal implements, together with a species of pottery known as *Gigi* ware, after a priest of that name who came to Japan from Corea in the eighth century, and who is supposed to have introduced the potter's wheel. The name is doubtless improperly applied to the ware found in the ancient tombs, for in court relics now preserved and dating back to the eighth century there is ware incomparably superior to this so-called *Gigi* ware, which should therefore probably be referred to a period much more remote. The stone implements found in these tombs are for the most part of an ornamental character, though some may have served for agricultural purposes. The former include the *magatama*, or "curved jewels" which were used as pendants. Some of them are of nephrite and chryso-prase, minerals never yet found in Japan, so that these ornaments must have been brought over from the Asiatic continent. Mr. Kanda thinks that the ancestors of the present Japanese, when they arrived in Japan, brought with them from their old home metal implements which, not being sufficient for all, were appropriated by the privileged few, the majority of the people going back to stone implements. This curious theory would explain the circumstance that many of the thunder-clubs already mentioned are so beautifully ornamented as to indicate, almost with certainty, the use of metal chisels; but archaeologists will probably prefer leaving this circumstance unexplained to adopting so violent an explanation.

WE have received the *Proceedings* of the Windsor and Eton Scientific Society for 1884, with the Society's diary and the presidential addresses since its formation in 1881. One naturally looks in the *Proceedings* of this and similar societies to the local work—the papers with some of the *locus in quo* in them—rather than to the more general papers read and lectures delivered. We find more than one instructive communication on the subject of the old Roman town of Silchester, near Reading; a paper on the trees of Windsor Forest, by Dr. Gee; whilst amongst the papers read during the four years, but not printed, we notice one

on some bronze implements found in the Thames near Windsor, on carnivorous plants found in the same neighbourhood, and on recent explorations of a tumulus at Taplow. The Society, which does all its interesting work on a subscription of five shillings from each member, is affiliated with the Albert Institute of Windsor, and was formed in consequence of the success of an exhibition of microscopes and other scientific objects which formed one of the fortnightly entertainments provided by this institute.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus* ♂) from India, presented by Mr. F. J. Edmonds; a Greater Sulphur-crested Cockatoo (*Cacatua galerita*) from Australia, deposited; two Great Kangaroos (*Macropus giganteus* ♂ & ♀), eight Silky Bower-birds (*Ptilonorhynchus violaceus*) from New South Wales; two Red Kangaroos (*Macropus rufus* ♂ & ♀) from Australia; two Bennett's Wallaby (*Halmaturus bennetti* ♂ & ♀) from Tasmania; a Roan Kangaroo (*Macropus erubescens*), two — Wombats (*Phascolomys* —) from South Australia, received in exchange; two Sumatran Rhinoceros (*Rhinoceros sumatrensis* ♂ & ♀); a Rufous-tailed Pheasant (*Euplocamus erythrophthalmus* ♀) from Malacca; a Bar-tailed Pheasant (*Phasianus reevesi* ♀) from North China; two Peacock Pheasants (*Polyplectron chinpus*) from British Burmah; a Silver Pheasant (*Euplocamus nycthemerus* ♀) from China, a Cocoi Heron (*Ardea cocoi*) from America, purchased; a Bonnet Monkey (*Macacus sinicus*), a Black Lemur (*Lemur macaco*), born in the Gardens.

OUR ASTRONOMICAL COLUMN

ANCIENT OCCULTATIONS OF ALDEBARAN.—In NATURE, vol. xxxi. p. 182, reference was made to an occultation of Aldebaran which Bullialdus found recorded in a Greek manuscript, and which it had been supposed was observed at Athens on March 11, A.D. 509. The extract from the manuscript is given at p. 172 of the well-known work of Bullialdus, "Astronomia Philolaica." The observation is perhaps mentioned in somewhat undecided terms, inasmuch as it is rather implied that after twilight had ended the moon seemed to have occulted the star; nevertheless we have its position described as close to the moon at the time of observation; and further: "Stella quippe apposita erat parti, per quam bisecatur limbus Lunæ illuminatus." If we remember rightly, Street, amongst others, has pointed out that the occultation itself could not have been seen at Athens, but must have been observed at some more eastern station. The following are results of a recent computation in which the moon's place has been determined on the same elements which closely represent the occultations observed in China B.C. 69, February 14, and A.D. 361, March 20, referring to the planets Mars and Venus respectively, as well as other phenomena recorded previous to the fourth century.

A.D. 509, March 11, at 2h. 30m. Paris mean time.

Moon's right ascension	...	...	...	48° 11' 23"
" declination	...	...	...	+12° 55' 46"
Hourly motion in R.A.	...	...	...	30 15
" " Decl.	...	...	...	+7 12

The position of Aldebaran was in R.A. 48° 10' 16", Decl. +12° 29' 29". The sidereal time at mean noon at Athens was 23h. 22m. 11s. Hence, calculating for Athens, we find the star disappeared at 3h. 7m., and re-appeared at 4h. 37m. local mean time; the sun set at 6h. 6m., so that the occultation occurred in broad daylight, and "post accensas lucernas" there would be a considerable distance between the moon and the star, as seen at Athens.

By way of testing the moon's place here employed, we may examine the circumstances of another occultation of Aldebaran, which Gaubil extracted from the Chinese historical works, and thus describes:—"In the ninth year (period *Ying-ming*), (third moon, day *ping-chin*, the moon eclipsed Aldebaran;" this occurs in the records of the "Dynastie des Tsi du sud, la cour à Nanking." Gaubil gives the date March 29, A.D. 491. Proceeding as before we have for